TECHNICAL DATA SHEET

AQ-3

switchmode power amplifier

FEATURES AND BENEFITS:

- renowned MC² sonic performance and build quality
- Class AB design with switching power supply for low weight
- Power Reduction Circuitry
- Full DC and short-circuit protection
- Bridge/mono operation

The AQ-3 is a lightweight switchmode four-channel power amplifier designed to give the best performance from the smaller loudspeakers within the EM Acoustics product range.

Designed by MC² Audio, the AQ-3 is a Class-AB amplifier, which utilisies proprietary current-driven output stage technology to give exceptional transient response. The resonant power supply has a very large power reservoir, which allows the AQ-3 to deliver high transients without any perceptible "bass sag". This, along with the aluminium chassis construction are the keys to the very low weight, which makes the AQ-3 as ideal for touring applications as it is for fixed installations.

The AQ-3 is ideal for powering the smaller products within the EM Acoustics range. The AQ-3 features automatic impedance sensing and changes the output power accordingly. The AQ-3 features optical limiters, linked to the output current monitors and power supply which keep mains input and output currents within safe operating limits at all times, whilst maintaining the transparent sonic performance required. The inbuilt Power Reduction Control is also tied into these limiters – as well as the power supply, and continually monitors these as well as load, temperature and other operating parameters. Activated via recessed switches on the rear panel, the PRC effectively reduces the available power output from the amplifier. This allows the user to set the AQ-3 to have a maximum power below its rated output, ensuring the best possible match to a wide variety of different loudspeakers and improving overall system reliability.

The front panel for the AQ-3 carries the AC mains power switch and indicator LED, as well as a simple and intuitive set of indicators. 5-segement LED meters show audio signal presence and level (-24dB, -12dB, -6dB, -3dB and limit). Indicators for channel input link, PRC activation and audio protection are provided. Each channel also has a multi-detent analogue level control allowing precise signal level settings when in use. Amplifier protection is also an area where the AQ-3 delivers completely. A soft-start sequence with complete inrush protection means the AQ-3 powers up completely muted, and then gradually fades the input up to the previous level. A comprehensive diagnostic circuit constantly monitors load, temperature and other parameters and automatically adjusts the power supply if overheating or any other problems occur. Output short circuit and DC output are also protected – and the AQ-3 will only require a manual restart if output short circuits occur.

The AQ-3 is built around a 2U all-metal chassis, which provides a roadworthy package whilst keeping the weight low. Handles are included within the front 5mm thick fascia panel. A rackmount kit is also supplied to enable the amplifier to be secured at the rear for additional stability. Low-noise variable speed fans are fitted to the AQ-3 (cooling is from front to rear), along with a reticulated foam dust filter which can easily be removed for cleaning. The rear panel houses the Neutrik XLR input connectors, along with output connectors on SpeakON™ NL4. The captive AC mains power cable is also presented on the rear panel, along with the recessed switches for input signal link (link A-B, link B-C, link C-D) and the PRC controls for each pair of channels.

As a final touch, the output connectors for channels A & C carry other channels on pins 2+/2- - channel A carries channel B on its second set of pins, and channel C carries channel D. This enables simple and swift bi-amp wiring if required.

TECHNICAL SPECIFICATIONS

Amplifier class & channels :	AB, 4 channels
Output Power :	725W/ch @ 8 ohms, 750W/ch @ 4 ohms 1500W @ 8 ohms (bridged) (Measured with continuous sine wave @ 1kHz)
THD :	<0.008% @ 1kHz, <0.03% 20Hz - 20kHz (measured @ 1dB below max output power)
Gain/Sensitivity :	26 / 31 / 32dB, Sensitivity for maximum power +11 / 6 / 5dBu
Frequency Response :	20Hz - 20kHz +/- 0.3dB
Power Consumption :	2.7A nominal @ 240V, 5.4A nominal @ 120V (with 4 ohm load)
Input Impedance :	20k ohms (active balanced)
Input CMRR :	> 60dB
Damping Factor :	400 (8 ohms / 1kHz)
Signal-to-noise Ratio :	Better than 105dB (unweighted, 22Hz - 22kHz)
Signal Limiters :	Operate at maximum power to prevent signal clipping
Protection :	Output short circuit, DC output, over-temperature, mains in-rush control
Dimensions (HxWxD) :	88 (3.5) x 482 (18.9) x 428 (16.8) mm (ins)
Net Weight :	10.6kg/23.3lbs
Shipping Weight :	12.6/27.7lbs